

Unit 3

Day 2

Add/Subt/Mult Complex Numbers

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Adding, subtracting, and Multiplying Complex numbers

1)

$$(6 - 12i) + (11 + 3i) + (8 + 2i)$$

$$9 - 7i$$

$$2) \quad (3\sqrt{-32} - 5\sqrt{6}) + (2\sqrt{24} + 3i\sqrt{18}) - \sqrt{-98}$$

$$(12i\sqrt{2} - 5\sqrt{6}) + (-4\sqrt{6} - 9i\sqrt{2}) - 7i\sqrt{2}$$

$$-9\sqrt{6} - 4i\sqrt{2}$$

$$3) (2+4i)(-3+2i)$$

$$-6 + 4i - 12i - 8$$

$$-14 - 8i$$

$$4) (\sqrt{-8} + \sqrt{16})(\sqrt{25} - \sqrt{-50})$$

$$(2i\sqrt{2} + 4)(5 - 5i\sqrt{2})$$

$$10i\sqrt{2} + 20 + 20 - 20i\sqrt{2}$$

$$40 - 10i\sqrt{2}$$

$$\begin{aligned}
 5) \quad (3 - \sqrt{-8})^2 &= (3 - 2i\sqrt{2})^2 = 9 - 12i\sqrt{2} - 8 \\
 &= (3 - 2i\sqrt{2})(3 - 2i\sqrt{2}) \\
 &= 9 - 6i\sqrt{2} - 6i\sqrt{2} - 8 \\
 &= 9 - 12i\sqrt{2} - 8
 \end{aligned}$$

$(x-3)^2 = \cancel{x^2} - \cancel{6x} + 9$

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